



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1458  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,691	06/23/2003	Sidharth Jaggi	MCS-021-03 (302967.01)	7627
7590		05/24/2007		
Mark A. Watson Lyon & Harr Suite 800 300 Esplanade Drive Oxnard, CA 93030			EXAMINER BRUCKART, BENJAMIN R	
			ART UNIT 2155	PAPER NUMBER
			MAIL DATE 05/24/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/601,691

Applicant(s)

JAGGI ET AL.

Examiner

Benjamin R. Bruckart

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 1-6, 10-15 and 19-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-9 and 16-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 20070304.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

Art Unit: 2155

### **Detailed Action**

Claims 1-22 are pending in this Office Action.

Claims 7-9 and 16-18 are elected by restriction requirement.

Claims 1-6, 10-15, 19-22 are withdrawn.

### **Information Disclosure Statement**

The information disclosure statement filed on 3/4/07 has been considered.

### **Election/Restrictions**

Applicant has elected Group III: claims 7-9, 16-18 classified in 709/234 without traverse.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Specification***

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The claim languages cite... computing the linear combination coefficients

Art Unit: 2155

between sender and receiver are “full rank.” The examiner cannot find the terms “full rank” in the specification and is unsure of the meaning associated with the term. What makes them full?

### **Claim Rejections - 35 USC § 101**

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 7-9 and 16-18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 7-9 are directed to a system that performs mathematical computations without a useful, concrete or tangible result. The claims define a ‘system’, which is not defined within the claims, and the steps following the preamble are rejected as software per se.

Claims 16-18 are directed to a computer process without being embodied on any medium in the claim language. While a process is statutory the computer process is not embodied and review of the instant application’s specification (para 33-34), shows computer media that incorporate both statutory media such as disks, drives, ram, rom and non-statutory subject matter for example signals and carrier waves.

### **Claim Rejections - 35 USC § 112**

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 9 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claim languages cite... computing the linear combination coefficients between sender and receiver are "full rank." The examiner cannot find the terms "full rank" in the specification and is unsure of the meaning associated with the term. What makes them full?

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 7-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 7-9 recites the limitation "a system" but are followed by method or process steps. If the system is indeed a machine or device, it would need to be defined with components and not steps drawn to software per se.

Claims 9 and 18 recites the limitation "full rank" in the last limitation of each of the claims. The examiner cannot find the terms "full rank" in the specification and is unsure of the

Art Unit: 2155

meaning associated with the term. What makes them full? There is insufficient antecedent basis for this limitation in the claim.

### Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 7-9 and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by “Network Information Flow”, IEEE Transactions on Information Theory by R. Ahlswede et al (Applicant’s IDS) (herein after “Ahlswede”).**

Regarding claim 7, a system for computing a network code (Ahlswede: page 1204-5; Fig. 1); comprising:

- computing linear combination coefficients for each of at least one interior network node of a network, said nodes including a sender (Ahlswede: page 1206; capacities,  $r$  values or costs; Fig. 5);

- computing representation vectors for symbols exiting each interior network node from representation vectors for symbols entering each node and the linear combination coefficients (Ahlswede: page 1204;  $R$  is the vector; the symbols are the length of bits sent); and

- computing decoding matrices for each of at least one receiver of the network from the representation vectors for the symbols entering each receiver (Ahlswede: page 1206; decoder reconstruction of  $X$ ; Fig. 1 decoders).

Regarding claim 8, the system of claim 7 further comprising setting encoding vectors for each interior node, including the sender, to the linear combination coefficients (Ahlswede: Fig. 1; page 1214; multicast to all).

Regarding claim 9, the system of claim 7 wherein computing the linear combination coefficients further includes ensuring that the representation vectors for the symbols transmitted across edges

Art Unit: 2155

on a cut between the sender and each receiver are full rank (Ahlsweide: page 1205; F for flow across all nodes).

Claims 16-18 are substantially similar in scope and claim limitations and are rejected for the same reasons as set forth above.



### **Prior Art**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U. S. Patent Publication No. 20070094181 issued to Tayebnejad et al teaches coefficient linear normalization for data flow in a network (para 33).

### **Remarks**

The examiner suggests including algorithms in claim limitations with clear explanations of variables.

### **Conclusion**


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin R Bruckart whose telephone number 571-272-3982.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on (571) 272-4006. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and after final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the examiner whose telephone number is 571-272-3982.

Benjamin R Bruckart  
Examiner  
Art Unit 2155

B.R.B.

  
SALEH NAJJAR  
SUPERVISORY PATENT EXAMINER